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## MAY 7.

The President, SAMUEL G. DIXON, M.D., in the Chair.

Twenty-two persons present.

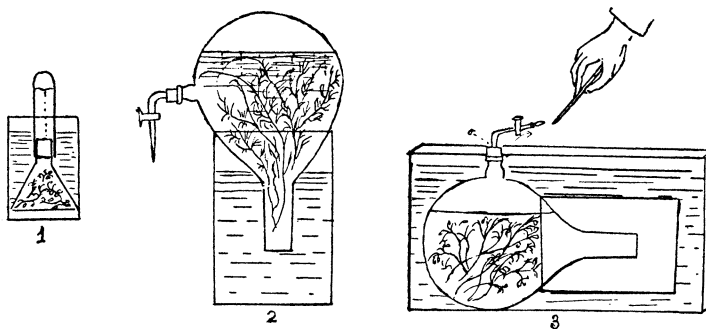
## MAY 14.

The President, SAMUEL G. DIXON, M.D., in the Chair.

Fifteen persons present.

*Demonstration that Plants give off Oxygen.*—DR. IDA A. KELLER remarked that there is no process in plant life of greater importance than the evolution of oxygen in the synthetic preparation of starch by the chlorophyll in the presence of sunlight. In teaching such physiological phenomena it is important to demonstrate them in such a manner as to leave no doubt in the mind of the pupil. The method usually described (by Detmer and others) to illustrate this process is quite familiar to all students of botany. It is represented by figure 1.

A piece of *Elodea Canadensis* is placed in a jar containing water. A funnel is inverted over the plant and a test tube filled with water is inverted over the funnel. The water is charged with carbon dioxide and the apparatus is placed in the sunlight. Very soon bubbles of gas are disengaged and collected in the test tube. The gas may then be shown to be oxygen. On account of the limited capacity of the apparatus employed and the comparatively small extent of the assimilating surface, this method is not very useful for purposes of demonstration because of the small volume of gas liberated.



She had found the following extremely satisfactory:—A receiver

holding two or three litres is employed and into this a considerable quantity of *Cabomba Caroliniana* or *Myriophyllum spicatum* is introduced (fig. 2). The water is thoroughly charged with carbon dioxide and the plants are then exposed to the sunlight. Little streams of gas are seen to pass upward from various points, and when sufficient gas has collected at the top of the flask, the latter is immersed in a tank of water in a horizontal position in such a manner that the gas is directly under the opening (fig. 3). On turning the stop-cock and applying a splinter of wood with a spark on the end of it the gas will be found to be oxygen.

When the supply of carbon dioxide in the water has been exhausted the plant will no longer give off bubbles of oxygen. The process may be again initiated by passing carbon dioxide into the receiver. Before testing it is best to allow the carbon dioxide to become exhausted, since in recharging the water it is impossible to avoid collecting some of this gas over the liquid and adulterating the oxygen. On standing it is gradually absorbed by the water and consumed by the plant. In any case the gas collected is not pure oxygen, but it is sufficiently rich in this substance to make an effective demonstration.

The deaths of D. Shepherd Holman, a member, May 13, and of Thomas C. Porter, a correspondent, April 27, were announced.

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MAY 21.

Mr. CHARLES MORRIS in the Chair.

Seventeen persons present.

Papers under the following titles were presented for publication:

“Fishes from the Caroline Islands,” by Henry W. Fowler.

“Types of Fishes,” by Henry W. Fowler.

*Structure of Diatoms.*—MR. FRANK J. KEELEY remarked that in studying the structure of diatom valves some years ago the method employed: mounting broken valves at right angles to the cover glass, proved efficient for most of the coarsely marked forms, but failed with certain species of *Aulacodiscus*.

Such forms as *A. Sollittianus*, *A. margarataceous*, etc., yielded satisfactory sectional views and proved not to differ materially in structure from *Coscinodiscus*; but another group, including *A. Oreganus*, *A. Rogersii*, *A. Janischii*, etc., proved too opaque for the elucidation of their structure by this method. Further exam-